

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
AT BLUEFIELD

LARRY L. KOGER,

Plaintiff,

v.

CIVIL ACTION NO. 1:08-0909

NORFOLK SOUTHERN RAILWAY
COMPANY,

Defendant.

MEMORANDUM OPINION AND ORDER

Plaintiff filed a motion in limine to preclude the testimony of George Page, defendant's ergonomic expert. On November 19, 2009, the court held a Daubert hearing on the motion. At the conclusion of the Daubert hearing, the court granted plaintiff's motion to exclude Mr. Page's testimony. The reasons for that decision follow.

I. The Legal Framework

For Page's expert testimony to be admissible, he must be qualified as an expert pursuant to Rule 702 of the Federal Rules of Evidence. Rule 702 provides that

[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based on sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702. Helpfulness to the trier of fact is the touchstone of Rule 702. Kopf v. Skyrn, 993 F.3d 374, 377 (4th Cir. 1993). Expert testimony "is presumed to be helpful unless it concerns matters within the everyday knowledge and experience of a lay juror." Id.

Under the Federal Rules of Evidence, trial judges must ensure that expert testimony is both relevant and reliable. Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 589 (1993). The Supreme Court has emphasized that "the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular testimony is reliable." Cooper v. Smith & Nephew, Inc., 259 F.3d 194, 200 (4th Cir. 2001) (quoting Kumho Tire Co. v. Carmichael, 526 U.S. 137, 152 (1999)). In Daubert, the Supreme Court established several factors trial courts may consider in admitting expert testimony, including 1) whether the expert's theory or technique has been or can be tested; 2) whether the theory or technique has been subjected to peer review and publication; 3) the known or potential rate of error of the technique or theory when applied; 4) the existence and maintenance of standards and controls; and 5) whether the theory is generally accepted. Daubert, 509 U.S. at 593-94; United States v. Crisp, 324 F.3d 261, 266 (4th Cir. 2003).

Although the Supreme Court provided a general framework for the analysis of expert testimony, no established procedure is required for Daubert analysis. See United States v. Wilson, 484

F.3d 267, 274 (4th Cir. 2007) (stating "the test of reliability is flexible and the law grants a district court the same broad latitude when it decides how to determine reliability as it enjoys in respect to its ultimate reliability determination"); see also Cooper, 259 F.3d at 199-200 ("[T]he factors discussed in Daubert [for analyzing expert testimony] were neither definitive nor exhaustive [P]articular factors may or may not be pertinent in addressing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony."). Even though Federal Rule 702 "liberalize[d] the introduction of relevant expert evidence," the district court must balance that freedom with the persuasiveness of potentially misleading expert evidence. Westberry v. Gislaved Gummi AB, 178 F.3d 257, 261 (4th Cir. 1999). The court notes that the burden of showing the reliability of the opinion rests on the proponent of the opinion, who must show admissibility by a preponderance of the evidence. Cooper v. Smith & Nephew, Inc., 259 F.3d 194, 199 (4th Cir. 2001).

II. The Opinion and Its Methodology

Plaintiff, Larry L. Koger, was employed as a conductor for the defendant, Norfolk Southern Railway Company ("NSRC" or "Norfolk Southern"). The case arose out of workplace injuries allegedly suffered by plaintiff on July 29, 2007. On that date, the locomotive on which plaintiff was working as a conductor derailed when it ran a red signal, causing the locomotive to

proceed when it should not have. Plaintiff alleged that his back was injured in the derailment.

Approximately a week after the derailment, on August 6, 2007, NSRC provided the following email to George Page, an expert in the field of ergonomics:

At approximately 10:55 a.m., U97U129, Engineer T.L. Johnson and Conductor L.L. Koger, Jr., reported for duty at 6:00 a.m. at Auville. They taxied to Eckman Yard and picked up unit NS 7638 to deliver to Dan's Branch. After making the delivery to Dan's Branch, the U97 was to come out of the East End of Eckman Yard and go back west to Huger to pick up empties to deliver to Lake Superior. After calling an advanced approach signal out of Eckman Yard, the U97 traveled east a [sic] 5 mph out of #1 Eckman Yard past the home signal (Keystone) and over the derail, derailing the east end of the locomotive (all wheels). They then notified the Poca Dispatcher, that they had their until [sic] on the ground at the east end of Eckman Yard N387.6.

There is an investigative report, but Melissa is hesitant to turn that over at this point. This factual information was taken from that report. If you need more information, please contact me and I will discuss with Melissa.

Exhibit D to Plaintiff's Motion in Limine. In addition to the brief description of the derailment obtained from Norfolk Southern, Mr. Page also obtained and relied upon data collected from the locomotive's event recorder. See id. at 1; Testimony of George Page, November 19, 2009, Tr. at 16-17.

According to Mr. Page, his role was "to assess whether this incident exposed engineers, in general, sitting in the locomotive cab to an elevated risk for development of lumbar (low back) spine injury." Expert Report of George Page, p. 3 (Exhibit E to

Plaintiff's Motion in Limine) Mr. Page prepared an expert report, dated August 9, 2007, opining that:

The impact, as experienced by the conductor, L.L. Koger, on locomotive NS 7638, on July 29th, 2007, at approximately 10:55 AM, and as described by the event recorder information of the incident, generated impact values (i.e., acceleration and change-in-velocity) that are well below published spinal column injury threshold values and human symptomology threshold values. Moreover, this level of impact was comparable to typical yard coupling events.

Recent epidemiological research regarding genetic attributes, psycho-social factors, and aging being associated with cervical and lumbar disc degeneration suggest other potential causes of low-back injury.

The locomotive cab seats provided for the engineer and conductor on NS locomotive units are state-of-the-art, manufactured by Seats, Inc. The seats provide both essential and additional seating features, including lumbar support adjustment, arm rest height (angle) adjustment, seat height adjustment, back rest and support inclination adjustment, seat pan for/aft adjustment, and seat pan rotation adjustment.

Id. at 5-6.

The methodology employed by Mr. Page was a "work-relatedness decision-making approach advanced by the National Institute for Occupational Safety and Health (NIOSH)." Id. at 3. The NIOSH methodology uses the following six-step process:

- 1) consideration of evidence of disease;
- 2) consideration of epidemiological data (low-back injury and collisions or impacts);
- 3) consideration of evidence of exposure;
- 4) consideration of other relevant factors;
- 5) evaluation and conclusions; and

6) consideration of validity of testimony.

Id. According to Mr. Page, he took information from the event recorder regarding the g-force involved in the derailment and compared that with the published data regarding the g-force level necessary to sustain an injury in the general population.

Testimony of George Page, November 19, 2009, Tr. at 18.

III. Analysis

The NIOSH methodology Mr. Page used was derived from a 1979 NIOSH guide entitled "A Guide to the Work-Relatedness of Disease" authored by Stanley Kusnetz, M.S. and Marilyn K. Hutchison, M.D. Id.; Testimony of George Page, November 19, 2009, Tr. at 14.

Although the NIOSH guide was geared toward occupational disease, Mr. Page testified that the American Medical Association had sanctioned its use in assessing traumatic injuries as well. See id. at 14, 22.

As noted above, the NIOSH approach is a six-step process. First, the evaluator is to consider evidence of disease. Mr. Page did not attempt to consider evidence of disease in this case but, rather, deferred to others. Expert Report of George Page, p. 3; Testimony of George Page, November 19, 2009, Tr. at 14, 23, 25-26, 34-35.

The second step in the NIOSH approach is the consideration of epidemiological data on low-back injuries and collisions or impacts. Mr. Page himself acknowledged a number of limitations regarding the studies he relied upon in formulating his opinion

and its application to the accident herein. First, Mr. Page admitted that the majority of the research on which he relied in studying the effect of collisions on the spine had been primarily in the area of the neck and not lower back injuries like that allegedly suffered by Mr. Koger. Expert Report of George Page, p. 3. Mr. Page also stated that the literature regarding rear-end collisions did not "distinguish between rear-end, side, or head-on collisions and symptom or injury outcome."¹ Id. In addition, Mr. Page testified at the Daubert hearing that in the studies he relied upon, for the most part, the test subjects were seated in controlled settings with their back flat against a backrest, wearing seatbelts, and using headrests. Testimony of George Page, November 19, 2009, Tr. at 36. The evidence in the case was that Mr. Koger was not seated in a similar position.

As to the third step in the NIOSH process, analyzing the evidence of exposure, Mr. Page looked at the data from the event recorder to assess the impact on the crew members when the train derailed. Expert Report of George Page, p. 1, 4-5; Testimony of George Page, November 19, 2009, Tr. at 19-20. According to Mr. Page, the locomotive's event recorder captured both change in velocity information as well as the time in which change in velocity occurs. Expert Report of George Page, p. 1; Testimony of

¹Plaintiff's expert, Dr. Harris, took exception to this statement and testified that there was a large body of literature which does make these distinctions. Testimony of Gerald Harris, November 19, 2009, Tr. at 132-33.

George Page, November 19, 2009, Tr. at 19-20. Mr. Page concluded that the g-force at impact was between .75 g and 2.3 g which, according to him, was "well below spinal column injury thresholds and reports of human symptomology (e.g. headaches) thresholds." Expert Report of George Page, pp. 1-2, 4.

According to Dr. Gerald Harris, a biomedical engineer who testified at the Daubert hearing on plaintiff's behalf, Mr. Page considered only longitudinal acceleration in his analysis even though a locomotive is subject to six types of motion. Testimony of Gerald Harris, November 19, 2009, Tr. at 134. Therefore, only one-sixth of the total forces at work were included in Mr. Page's analysis which was "not a scientifically valid way of approaching it because it disregards all the other directions of force." Id. As Dr. Harris elaborated, "[b]asically you can imagine when the locomotive derails, it's not just stopping, it's also moving laterally, and it's moving downward, and there is a rotational component involved in that. Those are all disregarded. The spine sees everything. The spine has to undergo all of that at the final point of impact." Id. at 135.

The fourth step in the NIOSH approach is to consider the impact of other relevant factors. Mr. Page stated:

Genetic attributes have been associated with disc degeneration (explaining 43% of the variability in disc degeneration in the lower lumbar regions of the spine, as compared with heavy leisure time physical loading, which explained 2% of the variability. Occupational factors were not found to be significant at this level of the spine). Others purport the importance of psycho-

social causes rather than physical occupational exposure factors. Moreover, advancing age has been associated with lumbar disc degeneration. The relative contribution of personal attributes, such as these, to lumbar spine injury is deferred to others.

Id. at 5. Therefore, despite acknowledging the significance of personal attributes in an analysis of this kind, Mr. Page did not consider these factors in reaching his conclusions.

Likewise, Mr. Page skipped the sixth step in the NIOSH framework which is the consideration of validity of testimony. He deferred this step to others. Id. at 3.

Even if the court were to assume that the NIOSH approach is a reliable methodology in the case at bar,² the foregoing makes clear that Mr. Page did not apply the principles and methods reliably to the facts of the case. Of a six-step process, he did not undertake to complete three of the steps. Furthermore, as discussed above, there were significant shortcomings with the second and third steps of the analysis.

It is also clear that Mr. Page's testimony would not be based on based on sufficient facts or data. Mr. Page relied on two pieces of data: the brief description of the accident provided by counsel for NSRC and the output from the event recorder. He did not interview either Mr. Koger or the engineer present when the

² At the Daubert hearing, Dr. Harris testified compellingly that such an approach was "seriously flawed" and too "broad based" to be of any scientific value in terms of estimating "what a specific individual experienced." Testimony of Gerald Harris, November 19, 2009, Tr. at 131.

train derailed; he did not view the locomotive or review pictures of the accident site; he did not consider any medical evidence; he did not consider seating position; and he did not consider five of the six types of motion the locomotive underwent. According to Mr. Harris, Mr. Page could and should have considered all six forces:

Mr. Harris: We know the geometry of a locomotive, and if we have a signal from an event recorder, we can apply some engineering principles and we can probably come up with some conservative estimates on all of those forces, all six of them.

Court: So you could take the one directional force that the recorder had and extrapolate, to a reasonable degree of scientific certainty, the other motions and forces going in different directions; right?

Mr. Harris: I think you can if you know about the locomotive, you know its geometry, you know where its center of mass is located, you know how the trucks are set up, you know how the tracks are set up, you know all the geometry of the tracks, you know about the ballasts and the ties. Those are - - that's like a first-year graduate course in engineering mechanics.

Testimony of Gerald Harris, November 19, 2009, Tr. at 141.

Given the foregoing, the court was unable to find that Mr. Page's opinion is based on sufficient facts or data or that he had applied the principles and methodology of the NIOSH approach reliably to the facts of this case. Furthermore, the court believed there was a significant danger that Mr. Page's testimony would confuse and/or mislead the jury. Although Norfolk Southern

repeatedly argued that Mr. Page was not doing an analysis specific to Koger, Mr. Page testified:

Mr. Page: What I'm doing is comparing the metrics from the epidemiology as it pertains to how to measure a shock event of a low impact type collision and compare those to the metrics that were present here in this event. And the epidemiology specifically looked at sled testing and car crash simulation. And when I say "epidemiology," the adverse health outcome in the epidemiology was whether or not the impact caused injury, either to the low back or the cervical spine, and then whether or not there was any change due to the impact in the test subjects' MRI's of their lower spine. And so that's the comparison of the epidemiology. The epidemiology has measures of the impact in terms of, okay, these specific individuals were exposed to a certain level of change in velocity in the impact and a certain level of force in terms of g-forces of the impact, so looking at those two measures from the epidemiology, how do those two measures compare to the measures from this event?

Court: So the conclusion the jury would be likely to draw, and probably the one that Norfolk Southern wants them to draw, is that because "X" number of people subjected to forces in excess of the force in this accident didn't suffer back injuries, is that - - am I right in that?

Mr. Page: Generally speaking you are, yes. Yes, your Honor.

Testimony of George Page, November 19, 2009, Tr. at 29-30.

Because "expert testimony may be assigned talismanic significance in the eyes of lay jurors, . . . the district courts must take care to weigh the value of such evidence against its potential to

mislead and confuse." United States v. Frazier, 387 F.3d 1244, 1263 (11th Cir. 2004).


IV. Conclusion

For all the foregoing reasons, plaintiff's Motion in Limine to Exclude the Testimony of the Defendant's Expert, George Page was GRANTED.

The Clerk is directed to send copies of this Memorandum Opinion and Order to counsel of record.

IT IS SO ORDERED this 23rd day of February, 2010.

ENTER:

A handwritten signature in black ink, reading "David A. Faber", is written over a horizontal line.

David A. Faber

Senior United States District Judge